

Radiological Remediation Goals – Briefing for Assistant Director Angeles Herrera

Friday, March 8, 2019, 9:30 am

1. Process overview – Navy schedule 8 month lag soil vs. bldgs
 - a. 3/13, 9:30 am, OCII office – Transfers Mtg
 - b. 3/13, 11 am Conference Call – Regulators Only Mtg

Ex. 5 Deliberative Process (DP)

2. EPA vs State regulatory framework
 - a. “Unrestricted”
 - b. “Similar to reference”
 - c. “As Low as Reasonably Achievable”
 - d. Disposal
3. Most significant concerns re State
 - a. Soil – ban on homegrown produce
 - b. Buildings scenarios
 - i. Residential - feasibility
 - ii. Industrial/commercial - restriction
 - iii. Disposal
 - c. RODs
4. Talking Points (see attached)
5. Next Steps

Attachments

EPA vs State Regulatory framework

	EPA	State
Basis of measurement	Risk	Dose, e.g. mrem/yr
Authority	CERCLA	NRC Agreement state
Requirement for closure	1×10^{-4} risk for realistic scenario for reasonably anticipated future use	RRUR Letter – Radiological Unrestricted Release Recommendation 1. “Similar to reference” 2. ALARA – As Low as Reasonably Achievable 3. Unrestricted Use Note: No numerical limits (see response to audit, attached)
Disposal	<ul style="list-style-type: none"> EPA does not regulate disposal PRG Calculator “indoor worker” scenario will be protective for disposal scenario for buildings. 	<ul style="list-style-type: none"> Disposal in California needs RURR letter Class 2 landfills can accept some rad waste, DTSC is researching with the Regional Board, which oversees Class 2 landfills. Keller Canyon will not accept HPNS materials
RGs – soil	<ul style="list-style-type: none"> Current RG’s still in NCP Risk Range with IC ban on homegrown produce Current RG’s not in NCP Risk Range if unrestricted 	RG’s not relevant in State regulatory framework
RGs – buildings	<ul style="list-style-type: none"> Residential (i.e. unrestricted) scenario – Almost all RGs would need significant reductions to reach NCP risk range Indoor Worker (industrial, commercial, disposal scenario) – Some RG’s would need some reductions to reach NCP risk range 	RG’s not relevant in State regulatory framework
Current RODs	<ul style="list-style-type: none"> IRGs for soil and restrictions on homegrown produce RGs for Buildings without specifying any restrictions 	Do not specify State rad requirements Not ARARs because no promulgated regulations to specify criteria exist

Suggested Talking Points

- I understand that your staff have briefed you on the EPA positions regarding radiological Remedial Goals. If you have any questions, we are happy to provide any answers.
- I have also learned from my staff more about the State regulatory framework for evaluating and approving rad cleanups.

- **Ex. 5 Deliberative Process (DP)**

- First, in an updated evaluation of the current ROD RG's, EPA finds the soil RGs protected only if we assume a restriction on homegrown produce. I understand that the State requires a property to be suitable for "unrestricted" use.
- Second, the EPA BPRG Calculator would require changes in RGs to stay under 1×10^{-4} risk for either a residential or indoor worker scenario.
- We expect most onsite buildings will be demolished and disposed of

Ex. 5 Deliberative Process (DP)

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- I am interested to hear your perspective and your ideas for creating a path forward to clean up the site in a manner that protects public health and that would require reasonable practical levels of effort appropriate for reasonably anticipated future exposure scenarios.

CDPH public statements about its requirements:

Outside of Superfund requirements, the Navy cannot transfer property without a letter from the State of California giving a "recommendation for radiological unrestricted release" (RRUR). The California Department of Toxic Substances Control (DTSC) comment letter on the Parcel G Workplan requires the Navy to clean radionuclides to a stricter goal, that is, to the level of reference background or naturally occurring material.

'DTSC believes that a data point that exceeds an RG does not meet the RAO unless the Navy can demonstrate that the data point is NORM/background.'

5. If data exceeds RAO/RGs, the Work Plan indicates that further evaluation would be conducted to determine whether Site conditions are protective of human health using US EPA's current guidance on Radiation Risk Assessment. This would not meet CDPH's requirement to obtain levels similar to naturally occurring levels and/or anthropogenic background levels. As stated in the enclosed CDPH memo, "a final status survey report that compares the distribution of data from the building/excavation sites with applicable reference area data and documents the remediation efforts" will be required. Soil concentrations that exceed RGs plus reference area data (background levels) cannot be left in place. If left in place, CDPH has indicated that it cannot issue a recommendation for radiological unrestricted release to DTSC. Therefore, the Work Plan needs to be revised accordingly.

[[HYPERLINK "https://www.bsa.ca.gov/reports/responses/2007-114/5"](https://www.bsa.ca.gov/reports/responses/2007-114/5)]

Annual Follow-Up Agency Response From May 2016

After former Governor Davis issued his Executive Order (EO) directing California Department of Public Health (CDPH) to promulgate a "dose based" decommissioning standard, known as Radiological Criteria for License Termination (RCLT) by the U.S. Nuclear Regulatory Commission (NRC), CDPH determined costs of developing and promulgating such a standard/ criteria, was prohibitive and beyond the ability of the program to afford. CDPH continues to use the current, legal regulatory license termination process described in California Code of Regulations, Title 17, Section 30256, which consistently provided a more protective public health clean-up outcome than NRC's decommissioning standard of 25 millirem/year (mrem/yr). The decommissioning process in place is protective of public health and environment as evidenced by 1,272 license terminations tracked and documented since 2003 found only 4 exceeding a projected dose of 1 mrem/yr, and no site exceeded 3 mrem as compared to NRC's 25 mrem dose standard. This data demonstrates CDPH's decision not to adopt a specific dose-based release standard, but maintain its current case by case evaluation method led to residual dose results that are substantially lower than those that might be permitted under NRC's dose-based standard. By not developing a dose-based standard, protection of the public health's safety and environment has been strengthened. NRC accepted CDPH's process, as determined during the recent NRC audit, where the RHB was compatible and compliant with NRC RCLT requirements. CDPH believes requesting a rescission of the EO is problematic; the EO requires the State Water Resources Control Board and the Regional Water Quality Control Boards to enforce a moratorium barring the disposal of "decommissioned material" into unclassified waste management units or municipal landfills. By requesting the Governor to rescind this order, this enhanced environmental safety oversight would be eliminated.

Ex. 5 Deliberative Process (DP)

Q. EPA wants the Navy to use drastically lower Remedial Goals for buildings. These are too low to be detectible by our equipment.

A. Our national health physicist has field tested multiple types of equipment in an EPA building and found that, with a longer testing duration, he could indeed measure the lower levels.

Q. This is the first time in the country any site has been required to use such reduced Remedial Goals. That is not fair.

A. EPA headquarters has recommended for almost two decades that the entire country should use our Buildings PRG Calculator to estimate risk.

Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP) Changes made in May and July 2017 made the Calculator more effective at reflecting the risk for decay products of long-lived radionuclides such as Ra-226 and Th-232. In other words, it allowed tailoring the assessment to different radionuclides with different decay rates.

Q. The EPA's Preliminary Remedial Goals (PRG) Calculator to estimate risk is too conservative. Something is wrong with the model. We prefer the Department of Energy model "RES RAD," which is much better.

A. While each model has its pro's and con's, EPA's long-standing guidance recommends using the PRG model. That is why we have recommended in writing multiple times throughout 2018. We have heard that the Navy is running RES RAD in a way that does not adequately capture the long-term health effects of decay products in long-lived radionuclides, such as Ra-226, which is the greatest concern on this site and which has a half life of 1600 years. Regardless of which model you use, the long-term health effects are essential.